Take a look at the bigger picture

Look beyond than nutrition when monitoring and managing cows to prevent 'production' diseases

July's Large Herd Seminar, organised by Lillico Attlee and Evidence Based Veterinary Consultancy, set out to arm delegates with the latest information on metabolic disorders and dry cow management to make their stock healthier and their businesses more profitable.

A reduced milk cheque resulting from decreased milk production is only the tip of the proverbial iceberg in evaluating total disease losses from post-calving disease. So said Pennsylvania State University's Robert Van Saun, speaking at this year's Large Herd Seminar, entitled 'Looking after the cow – Getting it right', which was held near Exeter in early July.

His presentation focused on how to achieve good transitional cow health and how to monitor and manage problems. And his figures demonstrated why this is a key issue for all dairy herds.

"Not only is there milk lost following disease diagnosis and treatment, recent work has shown that 30% of total milk losses from a left displaced abomasum (LDA) occur prior to diagnosis.

And milk losses prior to disease diagnosis were also found for metritis and ketosis. In fact, survey data suggests that more than 50% of all lactations are affected by at least one periparturient disease, suggesting substantial economic loss from these diseases.

Efficient performance

So the ultimate goal for producers is to get cows through the transition period free of disease problems so they can expect a fairly productive lactation period with high hopes of efficient reproductive performance.

Nutrition has a key role to play here, as does monitoring metabolic profiles and cow status to identify transition cow problems. But these are not the only tools and measures at producers' and vets' disposal – and nor should they be. Many other factors, including management, ration formulation and mixing, body condition score and breeding, should also be taken into account. "Nutritional problems may range from the simple to extremely complex interrelated issues. Simple problems may result from a single nutrient deficiency, inappropriate mixing of the diet, or inadequate feeding facilities, whereas complex problems may involve interactions between nutrition, environment and feeding management," he said.

Professor Van Saun added that some diagnostic problems are straightforward and do not require intensive investigative efforts. But when a more troublesome problem is confronted, a strict methodical approach addressing several areas of management – not just feeding and nutrition – should be considered.

Ric Grummer:
"Avoid over conditioned cows at calving"

"Only infrequently will investigating one diagnostic component solve a herd problem. Unfortunately in many US herd situations, blood analyses are used preferentially in lieu of other more appropriate diagnostic procedures, such as ration evaluation and/or physical examination of the herd."

Team approach

"Most importantly it must be remembered that metabolic profiles are almost useless without being coupled with animal and management evaluations, including body condition scoring and ration evaluation. But if they are used with other diagnostic measures within a team approach can be an extremely useful," Professor Van Shaun added.

"Metabolic profile results do not always indicate nutrition or diet to be the underlying problem," he stressed. "For example, inadequate dietary energy density is not the only reason for elevated nonesterified fatty acids (NEFA) concentrations. Inadequate dry matter intake as a result of heat stress, overcrowding, poor forage quality, competitive social interactions, inadequate feed availability or a combination of these could also account for observed negative energy balance."

Metabolic disorders

The University of Wisconsin's Ric Grummer answered questions on how to get the cow off to the best possible start: should producers focus on the far-off dry, close up or post-calving transition period?

"Although the incidence rate of post-calving metabolic disorders is actually quite low, management of transition cows continues to be a priority among producers," he said.

Early lactation is when most dairy cows are culled and even though the overall rate of disorders is low, the rate may be much higher on individual farms.

"When problems occur on individual farms, it is often difficult to identify the cause. It may be nutritional, it may be environmental – possibly housing – or it may be an interaction between nutrition and environment.

"For decades, we preached that feeding during the close-up transition period was the most critical time for the prevention of metabolic problems after calving and that it was important to feed additional grain during that period," said Professor Grummer.

"And data clearly shows that cows tolerate a wide variety of diets during that time and forage to concentrate ratio has little impact on postpartum performance.

"But now there is considerable interest in the far-off dry period and some feel feeding during that period may be more crucial than the close-up dry period."

There is a fairly substantial body of evidence to indicate that cow should not be over-conditioned at calving. But it is difficult to significantly increase condition score of dry cows during the relatively short time frame of the dry period when feed intake is low.

"The most critical time for feeding transition cows is probably immediately after calving, but research is lacking to confidently develop optimal energy/carbohydrate feeding strategies for that period."

Robert Van Shaun:
"A strict, methodical approach is vital"

Professor Grummer also shared the results of studies to determine if altering dry period (DP) length or feeding during the DP could affect postpartum energy status, lactation performance, or reproductive efficiency.

"Reducing the DP from 55 to 34 days reduced milk and solids-corrected milk yield the subsequent lactation for younger cows (second lactation) but not older cows (third or greater lactation).

"Shortening of the DP resulted in earlier first postpartum ovulation in younger and older cows and earlier pregnancy in older cows. The improvement in time to pregnancy in older cows may be partially explained by earlier time of first artificial insemination (AI) and improved fertility at first and second AI," he said.

"Feeding close-up diets for the entire DP rather than just the final three weeks before calving caused a dramatic increase in milk yield during the subsequent lactation. But, dry cow feeding strategy did not affect reproductive parameters," he concluded.

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